

# ESO Technology Advisory Council

## TAC-16

**Date:** 06/09/2024      **Location:** CGI London / Virtual  
**Start:** 09:00      **End:** 12:30

All material from the meeting can be found on the ESO Technology Advisory Council website:  
<https://www.nationalgrideso.com/who-we-are/stakeholder-groups/technology-advisory-council>

## Participants

Attendee	Organisation
Eric Brown (Chair)	Attendee name
Chris Dent	University of Edinburgh
Andy Hadland	Independent
Alastair Martin	Flexitricity
Alvaro Sanchez-Miralles	Stemy Energy
Shubhi Rajnish (SR)	ESO
Cameron Shade (Facilitator)(CS)	ESO
Naomi Baker	Energy UK
Jo-Jo Hubbard	Electron
David Sykes	Octopus Energy
Teodora Kaneva	Tech UK
Anthony Riding	Elexon
Kate Garth	RWE Renewables
Fred Drewitt	Shell
Alex Waslin	BP
James Houlton	Mesh-AI
Teodora Kaneva	TechUK

### For specific agenda items

Attendee	Organisation
Darren Holyoake	ESO

Brian Nixon	ESO
Yingyi Wang	ESO
Zohreh Mohammadi	ESO
Damien Kelly	ESO
Sian Bexton	ESO
Pritpal Gill	ESO
Daniel Delgado	ESO
Simon Evans	ESO
Gurbinder Thandi	ESO
Brendan Lyons	ESO

## Apologies

Attendee	Organisation
Joe Stepney (JS)	ESO
Simon Pearson (SP)	Independent
Gareth Hislop	Scottish Power
Carolina Tortora	ESO
Mayank Jha	ESO

## Agenda

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1. Arrival
2. Welcome & Apologies
3. Minutes of last meeting and matters arising
4. Feedback from the last meeting
5. Flexibility
6. Strategic Energy Planning
7. FSO Day 1 to Day 2
8. Data sharing infrastructure
9. Open Balancing Platform Update
10. Subgroups update
11. Next meeting
12. AOB

## Actions

ID	Action Description	Owner	Due	Status	Date Opened	Comments
A02	Investigate whether teams can be used as an offline communication method with TAC members.	JS	07/06/2024	In progress	01/03/2024	
A03	<del>Organise September meeting in person</del>	CS	<del>06/09/2024</del>	<del>Closed</del>	<del>01/03/2024</del>	
A06	Work with SP and FD to organise a session with another sector	Chair	06/09/2024	In progress	01/03/2024	
A08	<del>Send out vote for September location</del>	CS	<del>21/06/2024</del>	<del>Closed</del>	<del>07/06/2024</del>	
A09	Ask for OBP topics TAC would be interested in seeing in the future	CS	01/08/2024	In progress	07/06/2024	
A11	Draft 2 pages on what the ESO would like to discuss with Telecoms director	SR / JS / CS	01/07/2024	In progress	07/06/2024	
A12	Survey members for preferences on future meetings.	CS	6/12/2024	New	06/09/2024	

## Discussion and details

#	Topics discussed
1.	<b>Arrival</b> <ul style="list-style-type: none"> <li>• Introductions and Breakfast provided.</li> </ul>
2.	<b>Welcome &amp; Apologies</b> <ul style="list-style-type: none"> <li>• The chair welcomed the virtual attendees to the meeting and thanked CGI for hosting us in person.</li> <li>• The chair summarised the agenda.</li> </ul>
3.	<b>Minutes of last meeting and matters arising</b> <ul style="list-style-type: none"> <li>• The minutes from the last meeting have been published on the ESO website.</li> <li>• An update was provided on the actions, which are with ESO to progress and have been slightly delayed. The chair offered to help progress action 06 alongside the ESO ready for the next TAC session.</li> </ul>
4.	<b>Feedback from the last meeting</b> <ul style="list-style-type: none"> <li>• An update was provided that the Connections 360 beta testing has begun which has been improving data quality with partners which has been beneficial to all. This has received positive feedback to date.</li> <li>• The feedback on Energy data domains has been taken onboard for the additional data sets suggested and these have now been incorporated.</li> </ul>
5.	<b>Flexibility</b> <ul style="list-style-type: none"> <li>• The main feedback asked from the session is to understand how ESO can accelerate the route to market.</li> <li>• Recommended TAC members read the flexibility strategy report if interested:</li> </ul>

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- <https://www.nationalgrideso.com/publications-library/markets-roadmap/flexibility-markets-strategy-call-input#How-to-get-involved>
  - TAC asked how the networks requirements are coordinated with flexibility. The response was in the example of RESP, capturing their requirements to ensure the workstreams are aligned and to take the whole network into consideration.
  - TAC questioned why pumps aren't included in the flexibility definition currently. The response was ESO are currently trying to manage the renewables however are taking a pragmatic approach and once they start to incorporate different sources of flexibility, they can move to something more technology neutral.
  - It was queried if ESO are considering multi vector, it was confirmed they're focusing on electricity before going to whole system.
  - TAC suggested that making a best use of renewables should be a marker for success.
  - There was a discussion that there are two main barriers to this to be aware of in the UK, the first being slow smart meter deployment, the second is electricity rules for small customers where you have to touch the fuse box when using assets which may require upgrades making the costs higher and therefore unaffordable.
  - It was questioned if IDNOs are in scope for this as they aren't often considered and can be found to not be as flexible as DNOs. ESO confirmed they are in scope.
  - It was highlighted in May ESO opened the call for input and saw a large number of responses and thanked the group for the responses received from their areas.
  - Previously feedback was given that batteries, storage and interconnectors are key to this for the overall strategy. However the first phase of the strategy will be focused on consumer flexibility to not delay delivery and phase two will include the other three areas.
  - There was a discussion which raised both the industrial and commercial areas are key to considering for the strategy.
  - It was also suggested reviewing the Australian market, who are 5 minute balanced and would have more certainty than our typical half an hour – could be a good case study to review.
  - Data centres were raised as being a specific use case to consider as they are limited to any power flex through usage type and limited battery availability – could look at shift in location rather than usage.
  - There was a question whether smaller time granularity would be achievable for all and whether ESO would be excluding some groups. It was suggested there could be a technology neutral approach would need to capture both sides of the market, the ESO agreed this was a good suggestion and could look into this possibility.
  - The group suggested stakeholders and customer/consumer engagement be included as an enabler. It would also ensure that costings for this aspect will be captured rather than an assumption and it being missed.
  - A discussion was had on participation vs engagement - people may have to be incentivised to participate so may need to share lessons and change opinions to make it easier for companies who will provide this. Ofgem and DESNZ are both doing a lot of work on the need for a consumer campaign on flexibility which ESO are engaged with.
  - It was raised that on the hardware requirements, the group agreed this isn't under direct control of ESO however would like to get visibility of the flexibility requirements from ESO which then means creation of hardware (e.g. EVs) can be built to meet the future requirement specifications. There was a further discussion that the ESO should look at what's being built across the global market rather than creating something specific and having to adapt the hardware.
  - It was asked that the group review the embedded spreadsheet with the detail on archetypes and the barriers matrix. ESO would like feedback on the barriers to get a full understanding of all barriers and archetypes.

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## 6. Strategic Energy Planning

- A question was raised that as the scope for CSNP includes all energy, which includes heat, is this in scope? ESO confirmed they are focusing on technology capabilities currently but recognise the need to fully understand dependencies and the prioritisation so will ensure heat is considered.
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- TAC asked how SEP fits into the ESO organisation and if it's aligned with FES. It was confirmed that ESO is now setup in directorates, SEP being one of them. FES sits in a different directorate, however the two are closely aligned – with one focusing on future strategy and the other network planning.
  - TAC questioned if there will be any changes as a result of CP30 and how ESO will respond to any changes once published, ESO offered to come back to a future TAC following this as more details will be known.
  - It was suggested that this doesn't have a whole system focus, it is network focused even on the digitalisation aspect. ESO agreed as a start it is however it will begin to take in data and consideration from all the other networks (e.g. transport, land, registries etc) which will be critical to understand the full bigger picture.
  - TAC requested an orientation slide to demonstrate what is in and out of scope. Materials are due to be available on the NESO website post launch 1<sup>st</sup> October.
  - On the RESP example it was asked if the level of differing technological capabilities and budgets are being considered as this may affect the level of consistency that can be expected and whether some will need specific work arounds.
  - A point was raised that LF Energy have open-source technologies they have built that could be looked into as they may be useful for this area.
  - The cross-cutting capabilities were explained as the focus area capabilities ESO identified.
  - TAC raised within the stakeholders the digital tech sector isn't represented, ESO agreed any future planning for energy needs to include the digital tech sector.
  - On the capability-based approach it was asked if there was any feedback from the TAC on things ESO should be aware of when setting up like this. The feedback was to think about the way the articulation happens across the teams and to start with the work, not the capability.
  - It was queried if doing whole life sanctioning will limit the way of working due to the lengthy process, ESO confirmed it should not as it's an internal funding – they're not expecting to know everything upfront and whole life more refers to a time period – this will be worded to avoid confusion.
  - SEP agreed to come back to the TAC in the future with the delivery ways of working to demonstrate on how this will work in practice.
  - TAC queried if as part of the work extreme events (e.g. wars) are being considered and subsequent lack of fuel, it was confirmed that the ESO has considered this in data modelling as a scenario.
  - All agreed this might be useful regular update at the TAC (as with other areas like Flexibility) the chair and ESO agreed to work on future topics cadence.

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## 7. FSO Day 1 to Day 2

- It was updated that the transaction is close to being finalised and therefore Day 1 should be imminent.
  - The ESO have been pushing forward to focus on Day 2 prior to the finalisation of Day one with a real focus on future capabilities for NESO.
  - Confirmed National Grid will continue to provide services for a period of 24 months. Both parties are keen to come off TSAs as quickly as possible – which is the drive to already be progressing the Day 2 work.
  - The ESO are taking the approach to try and follow tooling setup and best practice wherever possible rather than heavily customising to meet current processes.
  - It was questioned how from an architectural perspective ESO ensures this approach lands, ESO confirmed they have the right level of governance over architectural decisions and reviewing the approach regularly at the right cadence, ensuring not to over govern but put in the right controls.
  - TAC suggested ESO could have issues if people did not agree to out of the box functions and how this could delay the National grid exit if discussions and customisation goes longer than planned. ESO confirmed that the enabling functions leadership have aligned to the approach and will work closely with the SMEs to ensure it is delivered correctly.
  - TAC agreed delivery principle are good to have, they need to be few and unambiguous to ensure the answer to questions are obvious and easy to implement.
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- It was highlighted that not all functions will fit out of the box solutions and will require some customisation (settlements being a good example of this).
  - TAC suggested Digitalisation needs to take into account the next generation not today's generation as the future workforce will expect to be able to code as standard.
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## 8. Data Sharing Infrastructure

- This is being presented as a follow on from June TAC where timelines were discussed and the pilot has now started.
  - Ofgem have recently published a paper on data sharing - they see a need for an orchestrator for digital assets (for common assets which aren't in an individual's orgs control) – which is the focus the session.
  - The focus is on the interim DSI coordinator and the digitalisation orchestrator, Ofgem will be consulting on the orchestrator separately but have agreed the interim vehicle is needed more urgently.
  - The current consultation is on the interim role. ESO have been recommended as the preferred candidate for this role.
  - ESO published a report on this this week:
    - <https://www.nationalgrideso.com/document/324846/download>
  - ESO recognise this needs to be a sector wide approach, with a focus on digitalisation work that's been ongoing.
  - ESO confirmed that the interim role is purely on data sharing and will be sandboxed to that scope.
  - TAC asked who else was considered for the coordinator role, ESO confirmed they're unaware who was considered in full and that would be a question for Ofgem.
  - It was also questioned if any other country has undertaken this, particularly in a model where the operator and orchestrator are the same person, ESO confirmed no other energy market has done this that they know of, the closest comparison may be open banking.
  - Questions were raised on how this would work in practice, ESO agreed the sooner feedback is gained from the pilot the sooner it can be utilised to prove intent within the MVP. Towards the end of the pilot the solution will be proven, during the MVP it should be practical for more to be involved.
  - TAC raised a question on people, if the right people aren't involved in this it could become a blocker. ESO recognised this but do not believe it'll be an issue due to how much value people see in this.
  - A suggestion was made that this needs to be thought of through the lens of the consumer and ESO could look to learn lessons from other industries on how to engage.
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## 9. Open Balancing Platform Update & Roadmap

- Highlighted the improvement in the instruction algorithm, the delivery team now feel they have addressed the issue they went live with and any further work would be put into the backlog as future improvements.
  - ESO gave an update on the issue that occurred on the initial go live, 2 improvements have been made and now 95% of instructions are sent from OBP.
  - Previous TAC feedback was ESO focused too much on batteries so today the slides feature updated on the small zone.
  - The feedback was that it's good to see the iterative improvements and for recognising it's an appropriate time to stop focusing on this.
  - There was a question around moving to Sub MW and sub minute dispatch as this needs to be coordinated and OBP needs to be able do the necessary computation.
  - TAC agreed it seemed sensible to want to move to sub-MW and sub-minute dispatch and what the negatives may be, ESO confirmed they see it as necessary, the focus is more around timing when the change is made given the current capabilities of BM vs what is already able to be done in OBP.
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- ESO asked for feedback on resilience of non CNI systems. TAC suggested a trade off between market barriers and resilience for smaller units than bigger ones. If smaller systems fail the impact is minimal due to inertia so the barrier to entry should be less. As those systems scale up so should the technical requirements as the failure of a large system is a bigger problem. This works well in other industries and could be applicable here.
  - It was suggested ESO engage with the feedback given on flexibility as it may be beneficial.
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### 10. Subgroups

- Nothing further noted other than the updates on the slides.
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### 11. Next meeting

- It was suggested given the number of topics we have discussed today and the ask to bring some back on a regular cadence we may want to extend TAC duration going forward or increase the frequency.
  - The chair asked if these meetings are preferred in person or online, agreed both topics will be surveyed to the TAC members.
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### 12. AOB

- The chair thanked CGI for hosting in person today.
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